THE VETERINARY RECORD

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S., 1888.

No. 48. NOVEMBER 25, 1944 VOL. 56.

The Use of Sulphathiazole per os, and of Sulphanilamide E.O.S., Sulphanilamide L.S.F., Sulphanilamide Emulsion, Acriflavine Emulsion, Proflavine Sulphate Solution, Tyrothricin and Novoxil, by Udder Infusion, in the Treatment of Clinical Streptococcus Agalactiae Mastitis

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INTRODUCTION

There is basic agreement, amongst those who have studied the subject, that, given adequate laboratory service, the spread of *Streptococcus agalactiae* mastitis in a dairy herd can be efficiently controlled. Unless, however, we are in a position to cure clinical and latent mastitis, the incidence of this disease in a herd can only be reduced by the replacement of infected stock by healthy beasts. A steady flow of young stock for this replacement is a normal procedure in self-contained herds, especially where there is a definite breeding policy. The position in completely static herds is not so satisfactory. Moreover, this replacement is a fairly slow process, and if there are amongst the infected beasts a number of clinical cases, some form of treatment is indicated. Roach and Hignett (1944)[1] reviewed the literature in connection with streptococcal mastitis and showed that the trend to-day is towards the use of small quantities of fairly concentrated drugs usually suspended in mineral oil or jelly. The advantages of such methods are that the bulky apparatus required for the infusion of large quantities of dilute disinfectants is no longer necessary, and that the time required for the actual operation of treatment is considerably reduced. They also showed that doubt still existed as to the efficacy of many of the drugs in use to-day. These factors account for the multiplicity of products available for the treatment of streptococcal mastitis. The use of some of these products is described in this paper.

Selection of Cases.—The majority of animals treated belonged to herds in which mastitis control was being commenced, and in such cases adequate care was taken to protect the animals from the danger of reinfection. All the cows treated were clinically affected. In every case the nature of the causal organism was established. Only results from those cases which proved to be associated with *Streptococcus agalactiae* are described. Where there was suspicion of a "mixed infection" such cases are not included in this account. The majority of the cows treated were Ayrshires, the remainder being Shorthorn, Friesian, and in two cases Guernseys.

TECHNIQUE OF ADMINISTRATION OF DRUGS USED

Sulphathiazole.—The May and Baker product, "Thiazamide" was used for oral administration. 90 grammes were given as the initial dose with 30 grammes three times a day subsequently for five days. This procedure was adopted for the treatment of cows in a herd in which the animals scoured so badly when sulphanilamide was administered that the latter drug could not be used. The animals tolerated sulphathiazole very well and the farmer reported that scouring did not accompany treatment.

Sulphanilamide Ethyl Sulphonate (Sulphanilamide E.O.S.)—This is an I.C.I. product and is used in a 10 per cent. aqueous solution, dissolved in distilled water whenever possible, boiled tap water being substituted in the remainder of the cases. The drug was infused into the udder by gravity using a B.D.H. Vena flask. The quarter was stripped out before treatment, and rinsed with about 75 ml. of the solution. The main infusion was then given of 250 to 350 ml. depending on the size of the quarter. The drug was left in for 12 hours irrespective of the state of lactation of the beast. The treated quarters were stripped out several times on the day treatment ended.

Sulphanilamide Lactoside Sodium Formaldehydesulphoxylate (Sulphanilamide L.S.F.)—This is a Burroughs Wellcome product and appears as a yellowish slightly viscous fluid. The dose is 50 ml. per quarter, which was infused into the teat using a teat siphon fitting directly on to a Record syringe. The usual stripping before and after treatment was carried out. The drug was left in the quarter for 12 hours and treatment was repeated if it was considered necessary.

Sulphanilamide Emulsion.—The Boots preparation of this product was used. It was described as a 37 per cent. suspension in light mineral oil and appears as a very viscous white fluid. The results recorded here were obtained by the use of this drug in doses of 20 ml. per quarter sometimes repeated. This is well below the scale now recommended and probably accounts for the poor results obtained. Two of the cows treated showed a slightly abnormal response to the preparation.

Acriflavine Emulsion.—This was prepared according to the formula described by Watts (1943). It consists of one part of a two per cent. solution of acriflavine in 75 per cent. alcohol, shaken up with nine parts of medicinal paraffin. The dose is 20 ml. per quarter and administration is similar to that described for Sulphanilamide L.S.F.

Proflavine Sulphate.—A 1:10,000 solution of the May and Baker product was used. Administration was similar to that described for E.O.S. except that the preparation was not left in longer than a maximum of 15 minutes if lactating cows were treated.

Tyrothricin.—The appearance of this product varies somewhat according to the particular brand used. The results recorded here were obtained from the use of a product manufactured by Mulford Laboratories and marketed by Messrs. Sharpe and Dohme, Hoddesdon. It appears as a milky white fluid officially described as containing "Tyrothricin" (gramicidin and tyrocidin) 1·5 mg. per c.c. in a 50 per cent. mineral oil base, alcohol 6 per cent. The dose is 20 ml. per quarter and the technique of administration is again similar to that described for L.S.F. During the experiments recorded no untoward reaction was caused by the use of this preparation.

Novoxil.—This product is manufactured by E. R. Squibb and Sons, New York. It consists of a 5 per cent. suspension of silver oxide in medicinal paraffin, which gives the preparation a dark viscous appearance. The dose is 10 ml. repeated daily for three successive days, the preparation being left in the udder for 12 hours on each occasion. As has been described by Roach and Hignett (1944) there is sometimes considerable udder reaction to this preparation, and it is some 10 days before the milk returns to normal if the treatment has been successful. Treatment with this preparation has been confined to cases that have not responded to other forms of therapy.

RESULTS

These are summarised in the table (*over-leaf*). The drugs were used in animals selected at random and (except in the case of Novoxil) it seems fair to compare results obtained from the use of one drug with those obtained from the use of another. It should be pointed out here that these results are in addition to any published or in the course of publication by the author.

Some of the treatments were carried out by practitioners. In these cases it was not always possible to obtain sufficient milk samples to establish whether cows that had maintained a clinical response were actually cleared of infection. Apart from these cases, milk samples were taken at varying intervals until three months had elapsed after treatment. The post-treatment sampling was on the following scale: one test 7 to 10 days after the cessation of treatment and one 10 to 12 weeks after cessation; at least one further test was carried out between these dates, and in the majority of cases two further tests—even spaced—were included. If *streptococcus agalactiae* was not present at the end of three months such cases were described as "bacteriological cures." If the clinical response had been complete but agalactiae were still present these were described as "clinical cures," whilst "clinical improvement" denotes cases that had not cleared up completely but which had responded to a degree sufficient to make the treatment economically worth while.

Conclusions

Although the number of treatments carried out is small, an indication is given that we are not yet in a position to promise more than a clinical response in the treatment of clinical *Streptococcus agalactiae* mastitis. This emphasises that our outlook towards mastitis should be changed so that the prevention of the disease is more widely advocated. In this respect Bratlie (1942—*Wien. Tierärztl. Mschr.*—**29**. pp. 97 and 129) considered preventive measures, such as proper hygiene and isolation, etc., are of much greater importance in the control of mastitis than treatment. Since, however, such control cannot in itself reduce the number of infections, unless such infected beasts are removed from the herd

Summary of Results Obtained from the Treatment of Clinical Cases of *Streptococcus agalactiae* Mastitis

Drug Used	Dose	Number Treated		Bacterial Cures		Clinical Cures		Clinical Improvement		No Effect		Remarks
		Cows	Quarters	No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.	
Per Os												
Sulphathiazole	90 grammes initially	5	..	1	20·0	3	60·0	1	20·0	0	0·0	Administered for 5 days
	30 grammes T.I.D.	..	10	1	10·0	8	80·0	1	10·0	0	0·0	
Via Teat Canal												
Sulphanilamide L.S.F.	50 ml. per quarter 12 hours	14	..	4	28·6	5	35·6	4•	28·6	1	7·2	• One cow treated twice
		..	18	5	27·7	7	38·9	5•	27·7	1	5·5	
Sulphanilamide E.O.S.	250–350 per quarter 12 hours, 10 per cent. sol.	27	..	6	22·2	15	55·6	1	3·7	5	18·5	Post-treatment milk samples were not available in the case of 6 of the clinical cures to establish whether bacterial cures had resulted
		..	37	8	21·6	21	56·8	1	2·7	7	18·9	
Sulphanilamide emulsion	20 ml. per quarter 12 hours	7	..	0	0·0	2•	28·6	2†	28·6	3	42·8	• Dose 40 ml. on 3 successive days † 1 cow given 2 injections
		..	8	1	12·5	2•	25·0	2†	25·0	3	37·5	
Acriflavine emulsion	20 ml. per quarter 12 hours	13	..	3	23·1	4	30·7	3	23·1	3	23·1	
		..	18	4	22·2	6	33·2	3	16·6	5	27·7	
Proflavine sulphate	250–350 ml. per quarter	11	..	2	18·2	4	36·3	2	18·2	3	28·3	1 : 10,000 sol. left in quarter 5–15 minutes in lactating cows; 24 hours in dry cows
		..	12	2	16·7	5	41·6	2	16·7	3	25·0	
Tyrothricin ..	20 ml. per quarter 12 hours	18	..	6•	33·2	8	44·4	1†	5·5	3†	16·6	See remarks *re* E.O.S. These apply also to 3 cows (3 quarters) treated with tyrothricin • 3 cows (4 quarters) injected twice † 1 „ (1 quarter) „ „
		..	20	7•	35·0	9	45·0	1†	5·0	3†	15·0	
Novoxil ..	10 ml. per quarter 12 hours	9	..	3	33·3	3	33·3	1	11·1	2•	22·2	Injection on 3 successive days • Including 1 case of "black spot"
		..	9	3	33·3	3	33·3	1	11·1	2•	22·2	
Total ..		104	..	25	24·1	44	42·3	15	14·4	20	19·2	
		..	132	31	23·5	61	46·2	16	12·1	24	18·2	

and replaced by non-infected animals, it seems logical that more attention will have to be given to attempts to sterilise the udders of infected cows which have no shown evidence of mastitis.

Acknowledgments.—I should like to express my thanks to Messrs. I.C.I. (Pharmaceuticals), Ltd., Messrs. Burroughs Wellcome, and to Messrs. May and Baker for the supply of drugs used and to the practitioners of the Bristol Advisory Area, whose ready co-operation has been so helpful.

References:—

[1] Roach & Hignett (1944)—in publication.
[2] Watts (1943), *Vet. Rec.*, **55**, 175.

WHAT IS THE NATURE OF GRAM-STAINING?

No laboratory method is perhaps more familiar to even the most elementary student of bacteriology than the differentiation of bacteria into Gram-positive and Gram-negative organisms. Yet, as the novice often finds to his cost, it is a method that demands a certain degree of skill and practice for this differentiation to be dependable in his hands. The name itself of the method is an example of how the name of an author who happens to alight on some procedure that catches on afterwards in everyday practice can become perpetuated whereas otherwise nothing much else of his life's labours has survived to commend him to posterity. Sixty years ago Christian Gram, a young Dane who had gone to work in Koch's laboratory in Berlin, described the now well-known method of staining micro-organisms which differentiated them into two well-defined groups. The method consisted in the use of a dye of the pararosaniline series ("aniline gentian violet") followed by Lugol's iodine. The preparation was then washed in alcohol until no more of the blue dye appeared in the wash, and it was finally treated with a counterstain such as Bismarck brown, fuchsin, or neutral red. Organisms which retained the blue dye after alcohol extraction were designated as Gram-positive, whereas those which were decolourised were termed Gram-negative. Afterwards it was discovered that these differences in staining characteristics were correlated with differences in behaviour to various reagents including bacteriostatic agents. This has suggested the existence of chemical and physical features of fundamental importance.

Recently Dr. H. Henry, in the *Biochemical Journal*, has shown that the chemical constituent which gives micro-organisms their "Gram-positiveness" is the magnesium salt of ribonucleic acid, which is present in them in combination with a basic protein.

By suspending certain Gram-positive organisms in bile salt at 60° C. he found it was possible to separate from them an essential constituent of the Gram-positive molecular complex leaving behind intact cells which were Gram-negative. Furthermore, he found that the extracted cells, after suitable reduction could couple up with extracts so as to be Gram-positive once more. The material common to all the bile salt extracts was the above magnesium salt of ribonucleic acid, and the basic protein with which it enters into combination has now been separated from some Gram-positives. This again has been found to combine with the magnesium salt of ribonucleic acid to form a complex nucleoprotein which stains Gram-positive.

More and more then, as time now passes, we can assess the rapid progress which has resulted from the advent of the biochemist into those specialities which were taken up with ardour and missionary zeal barely more than two generations ago by medical workers, human and veterinary. Those specialities soon became overladen with a strange and capricious assortment of workaday methods, useful in the main in their application, but wholly empirical in their conception, and it is the biochemist who is now lifting away from those self-same methods the seemingly impenetrable mystery with which very many of them were enshrouded.

If any moral calls to be drawn from this it is that we now seem to perceive more and more clearly the need to impress early upon the novitiate to medicine an intelligent grounding in the natural sciences, of which biochemistry is not the least important. For it is the impact of workers thoroughly grounded in those sciences that is now, as nothing before has ever done, redeeming traditional medicine from empiricism.

J. T. E.

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OCCURRENCE OF EPILEPSY IN CATTLE

A young brown Swiss bull showed signs of epilepsy at six months old. Tongue chewing, slight foaming at the mouth and collapse in coma were the chief symptoms. Injections of calcium gluconate relieved the symptoms in about 15 minutes. F. W. Atkeson, H. L. Ibsen and F. Eldridge (*J. Hered.*, **35**. 45; 1944) describe the case and the progeny derived from this bull. There were 37 offsprings of which 23 were apparently normal, 13 were epileptic and one died at birth. There are indications that this autosomal dominant is of recent origin. The attacks take place in the first two years of life; as the animal gets older, the intensity and frequency of the attacks varies considerably and in some cases may not be detected.—*Nature.*

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Weekly Wisdom

He who learns from one occupied in learning drinks a running stream. He who learns from one who has learned all he is to teach drinks the green mantle of the stagnant pool.—Inaugural lecture of Mr. A. J. Scott, first Principal of Owen's College, Manchester. Quoted by Bruce Truscot in "Red Brick University."

The Loveday Report*

(SECOND REPORT OF THE COMMITTEE OF VETERINARY EDUCATION IN GREAT BRITAIN).

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As one of the members of the North of Ireland Division appointed by my fellow members to study this report and give my views, I do so without fear or favour.

At the outset, I should like to make it clear that these are my views, and I have not been influenced by any published views or by the fact that I am in whole-time State employment. First of all, I would like to refer to the constitution of the Committee. There are six members with two secretaries.

The Chairman is the Vice-Chancellor of Bristol University, A. Thomas Loveday, Esq., M.A., LL.D., a man of great distinction and learning; the reports consequently have become known as the Loveday Reports.

Sir Joseph Barcroft, C.B.E., M.A., F.R.S., a Northern Ireland man and famous pathologist, is the second name on the list. For many years he was Professor of Physiology in Cambridge, and brings to the Committee the maturity of outlook acquired by learning and years. He has always taken a great interest in our profession.

The third name belongs to W. L. Burgess, Esq., C.B.E., M.D., F.R.C.P.E., D.P.H., a member of our sister profession and one whose views will command our attention and respect.

The fourth name is Sir Louis J. Kershaw, K.C.S.I., C.I.E., a distinguished retired Indian Civil Servant, who was born in 1869, and was educated in both Belfast and Dublin Universities.

The two remaining members are both veterinarians: John Smith, Esq., O.B.E., M.R.C.V.S., D.V.H., of the Colonial Office, and W. R. Wooldridge, Esq., M.SC., PHD., M.R.C.V.S. The terms of reference to the committee when it was originally constituted in 1936 were:—

"To review the facilities available for veterinary education in Great Britain in relation to the probable future demand for qualified veterinary surgeons and to report thereon, and in particular to make recommendations as to the provision which should be made from public funds in the five years, 1937-42, in aid of the maintenance expenses of institutions providing veterinary education."

The committee reported in 1938, but owing to the unsettled conditions then prevailing, action was deferred. The committee was called together again in 1943 by the Minister of Agriculture in consultation with the Secretary of State for Scotland and asked to review and if necessary, amend their recommendation. I will read two important sentences from Mr. Hudson's letter:—

"The Government has announced its intention of maintaining after the war a healthy and well balanced agriculture as an essential and permanent feature of national policy." And: "We are satisfied therefore, that in the changed circumstances not only is a better and in fact the best possible training for the veterinarians of the future of vital importance to agriculture but also numbers substantially greater than exist at present," etc.

This question of numbers is one about which there may be disagreement. My own feeling is that this committee had had access to certain information in connection with State Service and Colonial development and the reasons for their estimate are probably very sound. The committee's figure is 220 graduates per annum. In 1938 the estimate was 150 graduates annually for the quinquennium 1938-42. Actually in Great Britain the number of graduates for 1940, 1941, and 1942 was 185, 191, and 195 respectively, and there was no unemployment. It is just as well to realise that there was considerable expansion in the State Service and for the Forces. When saturation point will be reached is another question, at any rate I am not in a position to dispute the committee's figure.

The next point dealt with is the number, size and location of schools. The committee deals with the four existing British schools (London, Edinburgh, Glasgow and Liverpool). It points out that the Liverpool school can only handle an annual output of 30 graduates. The recommendations regarding Glasgow budget for a similar output, so that London and Edinburgh would need to produce 160 graduates annually. The committee, however, does not approve of this and in my opinion quite rightly. It is, however, asking both London and Edinburgh to produce 100 graduates annually between them. This recommendation is very difficult to understand and the committee's recommendation on this point is quite illogical.

The committee has discussed with the universities of Cambridge, Glasgow, Liverpool and Bristol the size of unit which makes for the most efficient teaching; from each university the reply was that the ideal size of a veterinary unit should provide for not more than 30 graduates annually and possibly for as few as 25. The arguments in favour of increasing the numbers at Edinburgh and London simply cannot be sustained in face of this unanimous recommendation of the universities and particularly in view of the fact that the whole trend of the committee's report is to bring the veterinary schools into the universities.

The committee discusses the location of two new schools to cope with the increased demand and gives reasons in favour of Cambridge and Bristol. As the committee hopes that both the London and Edinburgh colleges will be absorbed by the universities to which they are more or less linked, I cannot visualise either of these centres of learning agreeing to accept much larger numbers than the other four universities, therefore other new centres will be necessary, and I believe that we ought to bring the claims of Belfast before the committee: we have all the requisites asked for.

In Chapter III of the report the proposed link up with the universities is discussed. This part of the report has excited much controversy. Personally I am all in favour of veterinary education being brought under the universities, but I think it is absolutely essential that each university concerned should create a Faculty of Veterinary Science with Professors in all leading subjects on exactly the same basis as in the medical faculty. This is one of the essentials we must insist on. The Liverpool school is open to serious criticism on this score, and it is high time that the position was put before the university authorities. This to my mind is the crux of the matter, and we must as a profession make this our first condition, *i.e.*, a separate Faculty of Veterinary Science with Professors in all the major subjects.

The universities in return will demand that they train their graduates for a degree in Veterinary Science which will entitle the graduate to registration with the Royal College of Veterinary Surgeons and the right to practise. In other words, the student at the university veterinary school will obtain a B.V.M. or B.V.Sc. or whatever form of degree is instituted; his certificates will then be forwarded to the Royal College for his registration as an M.R.C.V.S. on payment of the required fee.

This is what has created the furore within our profession. Many members regard this recommendation as a retrograde step. These members have made their battle cry the "one-portal system." Their view is that this association with the universities and the right of the universities to award registrable qualifications will lower the standards of the profession. They assume that so long as the Royal College of Veterinary Surgeons has the power to appoint the board of examiners the standard of the profession will be maintained. Great store is set on the fact that the same written examination is sat for at all the colleges, and that the one board of examiners travels round and examines at each of the colleges. In other words, each student is considered to have passed the one and same examination to enter the profession, and presumably the examiners apply the same yard stick to each student. I can see much in the one written paper provided all the students have to answer the same questions, but frankly I am very strongly opposed to this travelling board of examiners. Examiners may start off with a standard in London, but by the time the examiners get to Dublin I am sure their ideas have altered considerably, and it is an ordeal that I would not care for, to mark the written papers for each college and take the orals. It may be physically possible when there are only eight or ten candidates in the year, but only a very exceptional examiner could examine 30 written papers at each college and do 30 orals, and then travel from the one centre to the next. As a point of interest it is worth pointing out that owing to travelling difficulties the one-portal system perished at Dublin.

To my mind the examination system requires overhauling. Surely it is a strange commentary that the very men who should be invaluable as examiners are not made use of, namely, the professors and lecturers, not of course of their own students, but of students at other centres. I believe I am correct in saying that it takes so much time to complete the examination circuit, that there is a dearth of suitable examiners particularly in the final year. It would be interesting to know the number of men who applied for the posts of examiners in medicine and surgery.

Another point of great importance, and one to which attention must be drawn, is that with all this talk of the "one-portal system," the only control which the R.C.V.S. exercises over the teaching institutions is in its conduct of the professional examinations through this single body of external examiners. Do you realise

* Memorandum to the North of Ireland Veterinary Medical Association, presented on the occasion of the discussion of the Loveday Report by this Division, N.V.M.A., at the meeting held at Stormont, September 15th, 1944.

that this board has no control over the instruction provided, the quality and quantity of teaching or the premises and equipment? There is no power to disaffiliate any school. The Loveday Report proposes to increase the powers of the R.C.V.S. and to alter this situation, and to give the Council of the R.C.V.S. similar authority to that exercised by the General Medical Council over the university medical schools. Surely such proposals represent a reasonable compromise between the universities on the one hand and the Council of the Royal College of Veterinary Surgeons on the other, and provide a basis for negotiation. Many of us consider this to be a great advance on the present system.

I make no apology for this digression. This question is so important that before a decision is reached every member should consider the present system and ask himself if it is perfect or even good and then try to visualise what the proposed new system will offer.

To my mind the argument that the giving of the right to certain selected universities to award registrable degrees will lower the standard of the M.R.C.V.S. Diploma will not hold water for one minute. My own experience of the Queen's University, in which I am a lecturer, indicates to me very clearly the great jealousy with which the university authorities guard their degrees. I sit on the Faculty of Agriculture and the limited experience gained there convinces me that the minimum standard exacted for a degree is insisted on at least as rigidly as in the examination of the R.C.V.S. Indeed from conversations with Edinburgh, Liverpool, and London graduates, it would appear that the university degree in veterinary science is more difficult to obtain than the M.R.C.V.S. qualification. No, I think we can leave our future safely in the hands of the universities if the examination standard is the only point confounding the one-portal enthusiasts. But surely there are great advantages in our association with the universities. In some of the colleges at the moment, much of the earlier training is carried out under the university, and my own feeling is that as students we benefited: I cannot see that it is going to lower the quality of the teaching—say in veterinary medicine and surgery—if the professor is a university professor. He will be just the same man as at present, but I am perfectly certain that in many cases the seat on a faculty of the university, the association with professors in the Medical and other Faculties, will be all to the good.

There is just one other aspect: it may be a minor one to many of us, but I will ask each one of you—would it improve your status if you possessed a university training and degree?

But surely if a spirit of sweet reasonableness prevails, suitable safeguards can be framed which will satisfy those members who see in the breaking down of the one-portal system the ruin of the profession.

I think these safeguards might be:—

1. The veterinary school must constitute a faculty within the university with professors in all major subjects.
2. External examiners to be selected from a panel approved by the Royal College of Veterinary Surgeons.
3. The council of the Royal College of Veterinary Surgeons to have power to inspect the school and that the premises, equipment and staffing must meet with their approval. The council must also have the right to approve, or disapprove the teaching or quality of instruction.

As mentioned, the report in fact does suggest these standards and the provisions set out provide a basis for negotiation that should enable the council of the R.C.V.S. to safeguard the interests of the profession.

The report deals exhaustively with finance. If the report is adopted, the financial proposals, the Field Stations and animal hospitals contemplated will undoubtedly fill a long-felt want in the teaching given at the present colleges.

No one will cavil at these proposals, but all of us will regret that it has taken the Loveday Committee to set out the present position, and suggested improvements so clearly. Without doubt, if money had been made available to the present colleges they would have made great improvements, but even if the teaching and facilities for teaching had been improved 100 per cent., it would not enable the Royal College of Veterinary Surgeons to confer a university degree; that can only come if the veterinary colleges are incorporated in the universities as Veterinary Faculties with the same standing as the Medical and other Faculties.

General Observations.—If certain veterinary schools are absorbed in the universities and their students can graduate with a degree and then be registered members of the R.C.V.S., obviously it will compel all the colleges to seek incorporation in a university. If they do not, students will attend the university in preference every time.

There are other minor points. On page 16, line 2, it states "To provide proper instruction the junior staff must be increased so as to ensure the adequate teaching in small groups of all the students." I cannot understand this desire for junior staff—is it to save money? Obviously within limits the more experience a man has the better teacher he will be; therefore provision should be made for the best junior to advance to the senior salary list after a few years' probation. Too often the services of good men are lost because no provision is made for their advancement which almost always depends on filling dead men's shoes.

A second point is, why on page 19 should there be a variation in salaries between different centres? This would automatically mean, that the centre offering the biggest salary would have a better choice of men and indeed might induce a professor from another centre to leave on purely financial grounds. To my mind this savours of class legislation.

There is one other point. Many of you will still remember vividly your student days and the class of "digs" you had to live in. One of the conditions which I hope will result and which we should insist on is that residential colleges or hostels will be part and parcel of the university system. This close association with students attending other faculties will, while broadening the outlook of the veterinary student, do much to give these other students a better appreciation of our profession, and indeed I am sure other faculties will benefit from contact with us, so that the advantages will be mutual.

In conclusion, for the benefit of any member who has not read the report I may state that the report recommends a capital expenditure of £1,038,000 on new buildings and reconditioning buildings in six schools and an annual upkeep grant for salaries and maintenance in the region of £250,000 As a profession, can we afford to ignore the report or refuse to accept it? All I ask any of you who is not convinced is to buy a copy and read it.

Discussion

Mr. Magowan: As one of the members of the Association elected to express an opinion on the Loveday Report to that meeting he rose to give the report his hearty approval.

Dr. Lamont had dealt with the report in detail; he had only one general remark to make and one matter of detail to raise. We as a profession had complained that in the past our services to the community had not been sufficiently appreciated; now, when that recognition by the Government was forthcoming, some had misgivings and were unwilling to take risks even if it meant losing the brighter prospects for veterinary education advocated by the report, yet everyone was agreed that the present system must be radically overhauled. We guarded and guided our destiny very successfully for 100 years when we were weak and less appreciated than now. There was no reason to believe that the members of the future would be less zealous of the standards of education or less effective in having them maintained than were our predecessors. He did not think that the profession could afford to do anything else than approve the report and press for its acceptance.

The special point that he wished to raise was one not touched on by Dr. Lamont and that was the question of bursaries for students. This was one of the finest proposals in the report and one which touched them in Northern Ireland very closely; they had many areas similar to those described of low rateable valuation, but producing a fine type of student often handicapped by lack of any financial assistance.

He did not know what provisions would be made for Northern Ireland in this respect, but he felt that the profession here should see that equal facilities were offered to students from such areas as were offered in Britain.

He was so convinced of the good which would result from the application of the recommendations of the Loveday Report that he hoped that the N.I.V.M.A. would give the report their unanimous approval and he formally moved that their wholehearted approval of the report be given.

Mr. R. W. Cassells: He was in agreement with practically the entire report. He thought it was an excellent report and that the committee was to be congratulated on a fine job of work.

It was his opinion that the profession could not afford to miss this opportunity of having so much done for it. The report was in itself evidence that it had at last been recognised that the profession was both useful and necessary in an agricultural community.

If veterinary education was to be taken up by the universities it must be made a separate faculty and all the major subjects taught by veterinary surgeons. We did not want too many outsiders trying to teach us our job.

Regarding the conduct of examinations, those, in his opinion, should be carried out by teachers from different colleges and a panel of sound practitioners.

Mr. H. D. Gilmore, having congratulated Dr. Lamont on his splendid review of the report, said that, for his own part, he considered it a very valuable contribution to the problem of the future of the veterinary profession with an emphasis on education. Many of them would agree with the criticisms of the curricula in the schools, which failed to realise the special needs of present-day veterinarians. It might be that the report contained some rather sweeping recommendations. The object, however, was apparently to show the weak spots that university education could assail, or gaps it could fill, in order to produce an adequacy of efficient veterinary surgeons. He considered the report was instinct with progress and the spirit of advance. The committee seemed to have explored the whole matter in the areas of education and economic security. The adoption of the recommendations would ensure to our profession the same rights and equal opportunities of education and training as the medical profession. A standard of efficiency both with regard to premises and teachers without infringing the essential liberty of the independent school would be secured to the profession. Other professions—medicine, art, science, engineering and agriculture—had university training, so why not the veterinary profession? Many advocates of the "one-portal system" were influenced by sentiment to a great extent and by theories not supported by facts. The recommendations made by the members of the Loveday Committee in their

(*Continued at foot of column* 1, *page* 461)

THE VETERINARY RECORD

November 25th, 1944

REORGANISATION OF DUTIES OF LOCAL VETERINARY INSPECTORS

IN a notice which we publish elsewhere in this issue, members will learn some of the details of the adjustment of the Panel system decided upon by the Ministry of Agriculture after consultation with the N.V.M.A. This welcome change takes place as from December 1st, 1944.

It has been felt by many practitioners that there was something a little invidious in the existence of Panel A and Panel B, and the institution of a single panel should go far to resolve this feeling and ameliorate the work of the busy practitioner. One of the most important benefits is that both salaried partners and assistants will now be considered for appointment to the Panel, and consequently the work will be spread over a larger proportion of the profession in general practice. It is fair comment that this should enable the profession to undertake a greater amount of disease control work, and at the same time will serve to introduce many of the younger men, hitherto debarred, to the field of State service. Here they will acquire under experienced guidance that added sense of responsibility in administration of relevant Acts and Orders which will serve them well if in due course they acquire practices of their own.

It may be desirable to offer some short comment upon the decision to select particularly Local Veterinary Inspectors to carry out certain duties not necessarily only upon the premises of their own clients. We understand this is not a departure from existing practice. There are in the country practitioners who by their own wish or for other reasons are not appointed L.V.I.s. Provision must obviously be made for the necessary State service to the herds and flocks of their clients, as well as to those of owners who do not employ a veterinary surgeon. Further, there are certain diseases which it is thought best should be dealt only by selected L.V.I.s. Diagnostic enquiries into outbreaks or suspected outbreaks of these diseases will fall into this category.

In connection with the non-payment of mileage for distances outside a radius of ten miles from the surgery, we are encouraged to believe that this clause is not likely to operate unduly harshly upon those who find themselves in the category of "special circumstances." It is suggested, however, that, to ensure smooth administration, practitioners who have cause to believe it may apply to their practices, should ensure that due time for consideration is given by making *early application* to the Ministry. This will facilitate the work and avoid a potential cause of friction or disappointment.

It is perhaps hardly necessary to repeat that it has for long been the declared policy of the N.V.M.A. to do all it can to increase the usefulness of the veterinary profession to the nation, and in this connection we feel sure that those of our members directly affected by the changes, both the whole-time staff of the Animal Health Division of the Ministry and L.V.I.s will do all in their power to ensure a smooth transition from the old order to the new, in the general interest of greater efficiency and service.

report on veterinary education were ambitious, but were based on inexorable logic against which he could find no argument, even in sophistry.

Mr. A. McFARLANE: Taking all the factors of the present situation, especially that of the examiners, into account, he did not see much to object to in this report and would be satisfied if they could ensure that a separate faculty of Veterinary Medicine would be set up in all the universities concerned.

RESOLUTION

Mr. MAGOWAN'S motion: "That the North of Ireland Veterinary Medical Association expresses its unanimous approval of the report of the Loveday Committee on Veterinary Education," having been seconded by Dr. LAMONT, was passed without dissent.

CLINICAL COMMUNICATION

Modern Methods of Wound Therapy

SHEILA STAINTON, M.R.C.V.S.

and

H. C. SWANN, M.R.C.V.S.

Subject.—Cocker Spaniel dog, aged 1½ years.

Case History.—The patient was admitted to hospital one hour after being "run over" by a motor lorry.

Examination revealed an extensive wound of the left hind leg, the skin of the leg being completely laid open from the toes to the groin, only remaining attached to the leg on the inner side of the limb. In the region of the hocks it was possible to pass the hand completely through the space between the skin and the joint.

Treatment.—The injury was so extensive that it was feared it would be necessary to remove practically all of the skin of the limb. Owing to the hopeless disfigurement which would result it was decided to attempt suture. At the same time it was felt that considerable interference must have occurred with the blood supply to the unattached skin and it was feared that union was not likely to occur and that the skin would "slough."

The wound was carefully bathed and cleansed in warm normal saline solution, débridement being performed where necessary. Hair on the edges of the wound was not cut owing to the difficulty which would have been experienced in preventing it from falling on the extensive wound surface. A thin layer of sulphanilamide powder was then placed over the whole surface of the wound and union of the unattached skin was brought about by 38 interrupted cat-gut sutures. The edges of the wound and the immediate environment were then smeared with a paste consisting of

Sulphanilamide Powder ℥ii.
Acriflavine Emulsion 1:1000 ad ℥ii.

A layer of lint was then applied to the wound and the whole limb was bandaged and encased from the groin to the toes by means of "Elastoplast."

The bandage and dressing were left intact for nine days. The temperature was taken daily and on the fourth day it rose to 103⅘° F., the patient showing signs of discomfort. Sulphanilamide grs. xv, was immediately given, followed by sulphanilamide, grs. viiss every six hours. Two days later the temperature was normal and the patient was more comfortable, but there was an offensive odour from the limb. Despite the odour it was decided to let the dressing remain in place another three days. On examination of the wound at the ninth day it was found that adhesion had occurred throughout the entire length of the wound except for two small areas, one in the region of the hock and the other around the toes. The surface of these wounds, however, presented a healthy granulating appearance. Palpation of the rest of the limb revealed no swollen or painful areas suggestive of deep-seated infection. The wounds were then dusted with sulphanilamide powder and as the patient attempted to interfere with them they were lightly bandaged and dressed daily for the next three days. The patient was not lame at the 14th day and after the 21st day no further treatment of the two smaller wounds was necessary.

DISCUSSION

This case has been recorded because it depicts the successful employment of three modern methods of wound therapy, *viz.*:—

(1) The topical application of sulphanilamide.
(2) The combination of sulphanilamide with an acridine dye.
(3) The "closed-plaster" treatment of wounds.

From this and similar cases the following conclusions have been drawn by the authors, particularly as regards "closed-plaster" treatment:—

(1) In the initial treatment of a wound, careful débridement should be carried out and care should be taken to avoid the use of irritant disinfectants and antiseptics, particularly of the cresol type. For this primary cleansing the authors prefer to use a warm saline solution.

(2) The sooner plaster treatment is adopted after infliction of the wound the better; comparatively long delays are often followed by successful treatment however, but such delay is responsible for more profuse discharge under the plaster by reason of established sepsis. Such cases are accompanied by a particularly objectionable odour.

(3) A moderate rise in temperature is not in itself an indication for removal of a plaster unless the patient shows obvious signs of pain or toxaemia. Similarly, objectionable odour is not an indication for removal of the plaster unless accompanied by one or the other of these complications.

(4) A closed plaster may be left in place for three to four weeks, but it will usually be found beneficial to change it at the end of the first fortnight.

(5) The method is of special value in the treatment of compound fractures.

ABSTRACTS

[Some Aspects of the Toxicology of Hydrocyanic Acid in Ruminants. S. J. VAN DER WALT. (1944.) *Onderst. J.* **19**. 79-160.]

This very valuable study of prussic acid poisoning in ruminants is divided into the following sections: Quantitative determination of HCN in biological material; sources of HCN; factors concerned in causation of HCN poisoning; HCN content of organs of normal animals and animals poisoned by HCN; chronic HCN poisoning.

A large number of cyanogenetic plants occur in South Africa (mainly species of *Gramineae* and *Dimorphotheca*) and poisoning of stock, particularly sheep, is of considerable economic importance. The toxicity of cyanogenetic plants is influenced by various factors, particularly by climatic conditions which cause wilting, since this greatly increases the HCN content of the plants. The condition known as "Geilsiekte," which is mainly HCN poisoning, occurs especially in sheep and is commonest in arid and semi-arid regions during spring and summer.

A number of methods are available for determining the HCN content of plant and animal tissues. The author has found the ferric thiocyanate method to be the most satisfactory and has introduced several modifications. For the liberation of HCN from cyanogenetic glucosides in plants the aeration method was used, followed by determination of total HCN with thiocyanate.

Animals sometimes gain access to cyanides through contamination of streams by the effluent from gold mines, from vermin poisons, and from the careless use of HCN in the fumigation of buildings and fruit trees for destruction of pests. Cyanogenetic plants are, however, by far the most important source of HCN poisoning of stock in South Africa and the author has determined the HCN content of a very large number of specimens, the results being given in a comprehensive table. The greatest concentration of HCN, 174·9 mg. per 100 g., was found in the fresh leaves of *Dimorphotheca Eckloni* at the flowering stage.

Very few of the South African plants which van der Walt found to contain cyanogenetic glucosides occur in Great Britain. *Medicago sativa* (lucerne, alfalfa), however, was found to yield 2·0 mg. of HCN per 100 g. of fresh whole plant. It is unlikely that plants liberating less than 20 mg. of HCN per 100 g. of fresh plant are dangerous to stock and it is probable that even larger quantities might fail to cause symptoms of poisoning.

The factors concerned in poisoning by cyanogenetic plants include: quantity of plant ingested; previous diet of the animal; *p*H of the rumen contents, HCN present in the plant in the free state and as glucoside, and the amount of enzyme present (liberates HCN from glucoside).

The rumen contents and livers of sheep dying at the Onderstepoort Institute from causes other than HCN poisoning contained only traces of HCN, whereas sheep dying under field conditions often showed a relatively high concentration of HCN in the rumen contents (cyanogenetic plants in the diet).

Ten sheep were given doses of HCN by the mouth varying from 2·2 mg. to 11·0 mg. per kg. body weight. The smallest dose caused only slight symptoms, a dose of 3·6 mg./kg. caused severe symptoms, and doses of 4·4 mg./kg. and over caused collapse after a few minutes and death after an interval varying according to the dose from 15 to 44 minutes. The HCN content of the liver was 0·14 to 0·5 mg. per 100 g. for those sheep which died: the corresponding values for rumen contents were 0·44 to 5·92 mg. per 100 g. Whilst the HCN content of the liver was roughly proportional to the dose of HCN administered this did not apply to the rumen contents and it is stressed that determination of HCN in liver samples is essential for a diagnosis of HCN poisoning. Analysis of the rumen contents affords useful confirmation but should not be relied on for making a diagnosis.

During *post-mortem* decomposition the HCN content of the liver falls rapidly; the loss from rumen contents is more gradual. Preservation of liver tissue in mercuric chloride solution completely prevented loss of HCN. Small pieces of liver (strips 0·5 cm. thick, cut into small pieces, 50 to 100 g. in all) immersed in 1 per cent. mercuric chloride retain their original HCN content for at least six days and this method of preservation is recommended for specimens sent to a laboratory for analysis. It is advisable to select the liver samples from the right lobe, since the concentration of HCN is more uniform here than in the left lobe, which may show a high HCN content because of diffusion from the adjacent reticulum.

It must be stressed that the presence of HCN in the rumen contents is not definite proof of death from HCN poisoning for the following reasons: 1. HCN is often found in the rumen of animals dying from other causes. 2. In the case of cyanogenetic plants the major part of the HCN found may have been set free only after death (action of enzyme on cyanogenetic glucoside). 3. Proof of *absorption* of a lethal quantity of HCN is lacking.

Administration of sublethal amounts of HCN to sheep over periods up to 15½ months failed to produce chronic HCN poisoning.

This article contains a large number of tables and charts and there are over a hundred references.

E. G. W.

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[Notes on the Treatment of Colic in the Horse due to impaction of the Colon. BOWEN, R. W. (1943.) *Austral. vet. J.* **19**. 141-143.]

The author has found that the most effective treatment for simple spasmodic colic is morphine followed in favourable cases by purgatives: Istin by stomach tube or arecolin subcutaneously.

In cases of impaction of the large or small colon it is suggested that peristalsis is best restored by the intravenous injection of 5 to 10 ml. pituitrin every one and a half hours until intestinal movements are approaching the normal; only when intestinal tone has been partially restored should arecolin be administered. In addition to the pituitrin, a dose of 1 oz. ammonium carbonate, 1 oz. pulv. nucis vom. and 4 drams Istin given in 1 gallon of water by stomach tube is recommended.

C. W. O.

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[An Investigation of *Myxomatosis cuniculi* with Special Reference to the Possible Use of the Disease to Control Rabbit Population in Australia. BULL, L. B., and MULES, M. W. (1944.) *J. Counc. Sci. Indus. Res.* **17**. No. 2, May, 1944. (2 refs.)]

The authors show that rabbits kept in a relatively small enclosure are forced to maintain close contact and this results in the extermination of a colony following the introduction of this disease and that the disease may be maintained for a long time if fresh rabbits are introduced at short intervals, provided other epizoötic diseases are excluded. The disease can be readily transmitted by the stick-fast flea and by mosquitoes. Wild rabbits can be infected successfully by skin injuries by means of a modified rabbit trap. Field experiments carried out over an area of 90 acres showed that colonies could be exterminated when the disease was introduced into them, but it did not spread from colony to colony or warren to warren unless the rabbits were heavily infested with stick-fast fleas. More extensive field trials under natural conditions gave favourable results when foxes were not present in large numbers and when rabbits were infested with stick-fast fleas. For the most part "the method failed to produce any appreciable effect on the rabbit population" due to the early removal of sick animals by foxes.

A. W. G.

ARTIFICIAL CONDITIONS AND STERILITY

Mr. J. A. Laing, of the School of Agriculture, Cambridge, addressing a meeting of farmers at Peterborough, on "Sterility in Livestock," with special reference to dairy cattle, said the artificiality of the conditions in which cattle were kept, so far removed from natural conditions, was chief cause of most difficulties.

Autumn and winter calving meant mating at diametrically opposite seasons to those intended by Nature. Under modern dairying conditions in ordinary commercial herds it had been found that with the use of a bull pen, 60 per cent. was a good percentage of cows conceiving at first service; at the second and third services most of the remainder would come in-calf.

IN PARLIAMENT

Foot-and-Mouth Disease

In the House of Commons on Friday of last week, on the motion for the Adjournment, Mr. TURTON raised the question of the recent outbreaks of foot-and-mouth disease and their effect on the future of the agricultural industry. The figures recently given to the House disclosed a grave situation—not because of the losses occurring in the slaughter of infected animals, but in the dislocation of markets in rural areas. Was the House satisfied that every step had been taken to prevent the disease occurring? The whole country was grateful to the Ministry of Agriculture for the success of their efforts to prevent outbreaks spreading and the number of secondary cases had been small. Why was a butcher allowed to keep pigs on his premises if, at the same time, he was handling foreign meat which admittedly carried the virus of the disease? A respected authority in the veterinary profession had told him that cases were constantly occurring of vehicles normally used for the carriage of livestock carrying carcases of imported foreign meat. Steps should be taken to ensure that all swill from military establishments should be processed before it left the camp.

Replying, Mr. TOM WILLIAMS, Parliamentary Secretary to the Ministry of Agriculture, said that foot-and-mouth disease was always a matter of concern to his Ministry: the veterinary inspectors of the Department had almost solved the problem of perpetual motion in their attempt to prevent the disease from spreading over the farms of Great Britain. Hay and straw might not be imported from countries where the disease happened to be endemic; uncooked meat might not be brought from Europe; there was stringent control over the movement of animals, and disinfection of vehicles. The present waste foodstuffs were possibly the greatest risk. The order requiring that swill taken to a farm must be boiled before use was almost impossible to enforce closely. Every effort towards doing so must be made if the disease was to be kept within measurable limits. Central processing had done much to reduce the danger. Recent outbreaks had been largely traced to South American meat. Only in a small number of cases had there been initial outbreaks where large quantities of raw swill had been taken to farms. In recent weeks a great many outbreaks had been traced to butchers' premises. Feeding unboiled meat bones to pigs was a vital source of the spread of the disease. More rigid control of butchers' premises was more difficult than it appeared. No regulation would prevent a dog taking a bone thrown to it by a kindly neighbour into the pastures, an action which had been known on many occasions to have resulted in an initial outbreak. To prohibit pigs being fed on butchers' premises would not be effective; the butcher might carry the infection on his smock to pigs kept even 250 yards away. There were still large quantities of raw swill being sent to farms. The order compelling the boiling of the swill was extremely difficult to enforce. They must rely on the good sense of the farmer himself.

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Questions

Poultry Breeding

Sir L. LYLE asked the Minister of Agriculture the nature of the Report of the Wilkins Committee on the Post-war Breeding of Poultry.

Mr. HUDSON: Proposals for developing poultry breeding stock have been recently submitted to me arising from a series of informal discussions between the Ministry and members of the industry. These proposals have been referred for their views to the various national poultry organisations, the National Veterinary Medical Association, and the County Councils Association, who will, no doubt, in due course submit to me any observations they have to offer.

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Farm Institutes

Sir R. GLYN asked the Minister of Agriculture what steps are being taken to encourage farm institutes being set up on modern lines as part of the county council's responsibility for agricultural development; and whether encouragement will be given to central farm institutes under the joint authority of two or more county councils grouped together in order to erect more appropriate buildings and to pay higher salaries to the staff at less cost to the rates of individual counties by sharing overhead expenses, loan charges, etc.

Mr. HUDSON: For the Government's policy regarding the establishment of farm institutes I would refer my hon. and gallant Friend to the statement which I made in the House on January 20th last. The practical steps which can be taken to implement that policy are at present limited by other claims on the resources of the building industry and on the services of technical staff qualified to give instruction at farm institutes. I hope, however, that county councils will do all that is possible in present circumstances by way of planning and preparatory work, and I shall give sympathetic consideration to any suitable proposals, including, where appropriate, proposals for joint action on the part of two or more county councils.

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Foot-and-Mouth Disease

Mr. A. DUCKWORTH asked the Minister of Agriculture the total number of cases of foot-and-mouth disease that have occurred in this country and in the county of Shropshire, respectively, in each year since 1939, inclusive.

Mr. HUDSON: The numbers of outbreaks of foot-and-mouth disease in Great Britain and in Shropshire during each of the years 1939-43, inclusive, and in the present year up to November 8th were as follows:—

Year	*No. of outbreaks in Gt. Britain*	*No. of outbreaks in Shropshire*
1939	99	... nil
1940	160	... nil
1941	264	... 11
1942	670	... nil
1943	27	... nil
1944 ... ... (up to November 12th)	156	... 4

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Demonstration and Experimental Farms

Mr. SALT asked the Secretary of State for Scotland if he can give a list of the existing demonstration and experimental farms in Scotland; and whether he has any plans for increasing their number.

Mr. JOHNSTON: Demonstration and experimental work is carried on by the various Scottish agricultural colleges or research institutes at the farms shown in the following list which are either owned or leased by them:—

Edinburgh and East of Scotland College of Agriculture: Boghall, Midlothian. Demonstration Horticultural Station, Cupar, Fife.
West of Scotland Agricultural College: Auchincruive, Ayrshire. Portend Farm, Perthshire.
North of Scotland College of Agriculture and the Rowett Research Institute: Craibstone-Duthie, Aberdeenshire. Croft, Ardross, Ross-shire. Glensaugh, Kincardineshire.
The Hannah Dairy Research Institute: Kirkhill, Ayrshire.
The Institute of Animal Genetics: Shothead, Midlothian.

In addition, the Department of Agriculture for Scotland are operating a "demonstration farms" scheme under which arrangements are made by the agricultural colleges with selected farmers for the demonstration on their farms of improved methods of agriculture. Under this scheme farms are being utilised by the various colleges as shown in the following list:—

Edinburgh and East of Scotland College of Agriculture: Craigluscar, Fife. Inner Hadden, Perthshire. Spittal, Midlothian.
West of Scotland Agricultural College: Newton, Perthshire. Corrary, Argyllshire.
North of Scotland College of Agriculture: Drumlassie, Aberdeenshire. Milton of Edinglassie, Aberdeenshire. Mains of Beldorney, Aberdeenshire. Hoy, Caithness-shire. Proney Croft, Sutherlandshire. Treaslane Croft, Skye. Ferrindonald Croft, Skye. Niginish Croft, Skye. Lochbay Croft, Skye. South Setter Croft, Shetland.

The demonstration farms scheme involves direction and supervision by the colleges, and, owing to the preoccupation of their county staffs on Agricultural Executive Committee work the colleges have not found it possible under war conditions to select a greater number of farms. It is hoped, however, that the scheme will be continued and expanded next year.

H.M. STATIONERY OFFICE PUBLICATIONS

The undermentioned have been published recently. Copies can be purchased through any bookseller, or directly from H.M. Stationery Office.

	Price net s. d.	*Post free* s. d.
STATUTORY RULES AND ORDERS, 1944:		
1258/S.59. Milk and Dairies (Scotland). The Milk (Special Designations) Amendment Order (Scotland). November 4th	0 1	0 2
1259/S.60. Milk and Dairies (Scotland). Heat Treatment of Milk (Prescribed Tests) Order (Scotland). November 4th	0 1	0 2

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Appeal from the Library, R.C.V.S.—Some member has borrowed the only Library copy of "Bullock's Handbook for Veterinary Surgeons," 3rd Edition, and has not returned it. As this edition is out of print, the Librarian urgently appeals for the return of the volume.

NOTES AND NEWS

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

Nov. 25th.—Annual General Meeting of the Society of Women Veterinary Surgeons, in London (69, Great Peter Street, S.W.1), 2.15 p.m.

Nov. 29th.—Meeting of the Royal Counties Division, N.V.M.A., at Reading (The University), 2.30 p.m.

Nov. 30th.—Meeting of the Lincolnshire and District Division, N.V.M.A., at Lincoln, 2 p.m.

Nov. 30th.—Special meeting of the South-Eastern Division, N.V.M.A., at Stone Street, Nr. Seal, Sevenoaks (Rose and Crown Hotel), 2.30 p.m.

Nov. 30th.—Meeting of the Eastern Counties Division, N.V.M.A., at Newmarket (March House), 2 p.m.

Dec. 1st.—Meeting of the North of England Division, N.V.M.A., at Newcastle-upon-Tyne (King's College), 2.15 p.m.

Dec. 5th.—N.V.M.A. Committee Meetings, 36, Gordon Square, W.C.1; Organising 11 a.m.; Appointments 2.30 p.m.

Dec. 6th.—Special meeting of the Scottish Branch, N.V.M.A., at Edinburgh (" Dick " College), 2.30 p.m.

Dec. 14th.—Ditto: Finance and General Purposes 11 a.m.; Joint Veterinary Officers and Public Health and Parliamentary, 2.30 p.m.

Dec. 15th.—Ditto: Nominations, in connection with Standing Committees for 1944-45.

Dec. 15th.—**N.V.M.A. Council Meeting,** in London, 12 noon.

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Reorganisation of Duties of Local Veterinary Inspectors

After consultation with the National Veterinary Medical Association, the Ministry of Agriculture and Fisheries has decided to adjust the existing arrangement under which Local Veterinary Inspectors are organised in two Panels. This system will be superseded on December 1st, 1944, by a single Panel of Local Veterinary Inspectors, all of whom will be available to carry out on the premises of their own clients (*a*) dairy herd inspections, (*b*) diagnostic enquiries under the Tuberculosis Order, (*c*) calf vaccination, and (*d*) tuberculin testing of Attested Herds and T.T. Herds. They will also be eligible to carry out the veterinary inspection of animals and poultry in markets. In addition, certain Local Veterinary Inspectors will be selected from the new Panel to carry out other duties, mainly diagnostic enquiries (other than for tuberculosis), on any premises whether the occupier is a client or not; and they may be called upon to undertake duties (*a*), (*b*), (*c*) and (*d*) above in respect of herds which are attended by veterinary surgeons who are not Local Veterinary Inspectors or are not attended by a veterinary surgeon at all.

In the case of the duties (*a*), (*b*), (*c*) and (*d*) above carried out by a Local Veterinary Inspector on the premises of his own clients, no mileage allowance will be payable in respect of mileage outside a radius of ten miles from his surgery, unless in special circumstances, *e.g.*, where, owing to geographical conditions or to the relative sparseness of the animal population practices are wider apart than over the country as a whole, the Ministry authorises a variation from the ten-mile limitation.

This revision of the Panel arrangements does not mean that a Local Veterinary Inspector will carry out all official work on the premises of his clients. The Ministry's whole-time inspectors will take part in the work as heretofore.

The Ministry has also decided to remove the ban on the appointment as Local Veterinary Inspectors of assistants and salaried partners. Such men will be considered for appointment under certain conditions which have been communicated to Local Veterinary Inspectors.

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Vaccination Against Contagious Abortion

A meeting was held at 99, Gresham Street, London, E.C.2, on November 14th, between representatives of the Ministry of Agriculture and Fisheries, the National Farmers' Union and the National Veterinary Medical Association with regard to Vaccine 45/20. As agreed at this meeting the Ministry has furnished a statement on the subject for publication in *The Veterinary Record* before its release to the agricultural Press generally and we have been asked to reproduce it in this issue. The statement reads as follows:—

VACCINATION AGAINST CONTAGIOUS ABORTION

" For the past two and a half years two live vaccines, No. 1 vaccine made from the American Strain 19 and No. 2 vaccine prepared from the English Strain 45/20, have been approved for use in T.T. herds and herds participating in the Scheme for the Control of Diseases of Dairy Cattle which were known to be infected with contagious abortion.

The available evidence suggested that both vaccines would be effective when used in adult animals, No. 1 vaccine in a single dose and No. 2 vaccine in two separate doses. No. 1 vaccine had also been widely and successfully used in the United States of America for the vaccination of calves and was accordingly adopted for that purpose in this country. One slight disadvantage of No. 1 vaccine is that inoculated animals develop agglutinins soon after injection and will therefore react to the blood agglutination test. Such animals usually become normal again, however, in the case of vaccinated calves before the time of first calving. No. 2 vaccine, on the other hand, was not thought to stimulate the production of agglutinins and was, therefore, considered to be the more suitable vaccine for adult animals in herds from which animals are sold on a negative agglutination test certificate.

The reason for restricting the use of the two vaccines to infected herds in the first instance was that full information as to their stability in the tissues of injected animals was not available. In the interval further experiments have been carried out, the results of which justify the extension of the use of No. 1 vaccine to any female bovine animal of any age whether or not the herd is infected with contagious abortion. Accordingly female animals in any T.T. herd in England and Wales or in any herd participating in the Control Scheme may now be vaccinated with No. 1 vaccine.

Experiments with No. 2 vaccine, on the other hand, suggest that it may undergo changes in inoculated animals which in some cases may cause them to react to the agglutination test, that it is less effective than No. 1 vaccine as an immunising agent and that it may possess other serious disadvantages. In the circumstances it has been decided to discontinue the preparation of No. 2 vaccine at the Ministry's Veterinary Laboratory until further notice."

We understand that there has not been time to bring the above information before the appropriate Committees and Council of the Association, but that a report on the meeting with the Ministry of Agriculture and Fisheries and the National Farmers' Union will be made to these Committees and the Council at the first opportunity.

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PERSONAL

Births.—JOSS.—On November 9th, at Redhill, to Joan (*née* Barber), wife of Graham E. Joss, M.R.C.V.S.—a son.

TURNER.—On November 10th, at the Sandwell Nursing Home, West Bromwich, to Peggy, the wife of A. Lawton Turner, M.R.C.V.S., of West Bromwich—a sister for Bruce, Yvonne Peggy.

Forthcoming Marriage.—MACKENZIE—BURROW.—The engagement is announced between Peter Zambra MacKenzie, Sudan Government Veterinary Service, only son of Mr. and Mrs. D. M. MacKenzie, and Mary Burrow, second daughter of Mr. and Mrs. F. R. Burrow. Both families are of Highgate Village, N.6.

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R.C.V.S. OBITUARY

AIMER, David Rintoul, Larchmont, Kinnordy Road, Kirriemuir, Angus. Graduated Edinburgh, July 20th, 1934. Died November 10th, 1944; aged 35 years.

KELLY, Arthur John, Lt.-Colonel, Shillong, Assam, India. Graduated July 13th, 1918. Died August 22nd, 1944. (Reported in *Journal R.A.V.C.*, November, 1944.)

WEATHERHEAD, Gerald Candy, B.A. (Cantab.), M.R.C.V.S., Veterinary Officer, Kampala, Uganda; son of the late Canon H. T. C. Weatherhead, O.B.E., C.M.S., Uganda. Graduated London, July 4th, 1941. Died in Kampala Hospital, November 8th, 1944; aged 28 years. The untimely death of this promising young veterinary officer recalls the sad notification, made some six months ago, that Gerald Weatherhead's wife, a member of the W.A.A.F., was killed in a flying accident in the U.S.A.

The Late Mr. David Pugh, F.R.C.V.S.

Mr. David Pugh, F.R.C.V.S., whose death we recorded with deep regret in our last issue, was a native of Wales and went to Sevenoaks 55 years ago to set up in practice. He had qualified in London and for a time had been assistant to a Tunbridge Wells veterinary surgeon. He continued in practice until 1922, when he retired and was succeeded by his son, Major L. P. Pugh. During the time he was actively engaged in his profession he rendered invaluable service to the R.S.P.C.A. and was also Inspector under the Ministry of Agriculture and the Kent County Council. Many of our readers will remember Mr. Pugh as a staunch supporter of the N.V.M.A. in its earlier days, and a valued member, also, of the Central Veterinary Society.

Two years ago Mr. and Mrs. Pugh celebrated the 50th anniversary of their wedding at Chevening Church, Mrs. Pugh, who comes from a well-known Lincolnshire family, being then resident in the parish.

Deep sympathy is extended to Mrs. Pugh, the two sons (Major L. P. Pugh and Mr. T. W. E. Pugh) and the daughter (Mrs. J. Lee).

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We regret to learn of the death, which took place at Torbay Hospital on November 12th, 1944, of Mrs. Bartlett, wife of Lt.-Col. E. B. Bartlett, O.B.E., R.A.V.C., of Torquay. Leonie Marie Bartlett was the only daughter of the distinguished French journalist, Paul Vlouet, Paris correspondent of *The Times*, who, as "Max O'Rell," was the author of the famous book "John Bull and His Island," in which the character and foibles of the insular Englishman were so vivaciously portrayed.

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UNIVERSITY OF LONDON EXAMINATIONS IN VETERINARY SCIENCE

Following is the October, 1944, Pass List of the examination for internal and external students held by the University of London for the B.Sc. (Veterinary Science): Brown, Philip Leonard (Royal Veterinary College), Epps, Elsie Margaret (Royal Veterinary College), Fitzpatrick, Reginald Jack (Royal Veterinary College), Maguire, Robert Daniel (Glasgow Veterinary College), Parker, Joseph (Glasgow Veterinary College), Sambrook, Philip Michael Fabian (Royal Veterinary College), and Wellington, John (Royal Veterinary College). The following candidate has passed in Part II only: Shah, Syed Mohammad Husain (Royal Veterinary College).

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R.C.V.S. ANIMAL MANAGEMENT EXAMINATION

List of Successful Candidates

(*Continued from Page* 454)

Edinburgh:

Bownass, R. C.	Moodie, E. W.
Bruce, I. H. M.	Moore, E. R.
Corrigall, Wm.	Phillips, J. E.
Cowie, J. F.	Rafferty, G. C.
Donald, L. C.	Richardson, S.
Fleming, J. A.	Riddell-Swan, J. M. (Credit)
Hall, J. H.	Robson, John
Head, K. W.	Soulsby, E. J. L.
Horseman, M.	Slee, Alan
Huddart, J. E.	Stockdale, H. G.
Kay, R. N.	Strachan, John
Kydd, W. J. C.	Sullivan, E. W.
Malloch, R. A. H. W.	Thomlinson, J. R.

Glasgow:

Barr, R. B.	McPhedran, Duncan
Cameron, I. H.	Main, William
Gordon, Miss E. D.	Moors, W. M.
Greig, Miss Jean	Whyte, Miss E. N.
Hillman, R. W.	Young, I. J. B.

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A GLASGOW COLLEGE CEREMONY

In connection with the presentation made to Principal Donald Campbell, to which reference was made in our last issue, we have pleasure in publishing the following communication, received from Mr. James Austin, LL.B., the Secretary of the Glasgow Veterinary College:—

Dr. J. Russell Greig, M.R.C.V.S., F.R.S.E., Director of Animal Diseases Research Association, at the recent prizegiving ceremony at Glasgow Veterinary College made some observations which are specially interesting to Glasgow graduates, but are of general interest to the veterinary profession.

On behalf of the Governors, he was presenting a cap and M.R.C.V.S. gown to Principal Donald Campbell, and the actual words of his speech, which are well worth repetition, were as follows:—

"When I was invited to take part in those proceedings, I accepted gladly, with a sense of pleasure, honour, and also of privilege. My sense of pleasure has been marred by the absence of the Principal, whose illness, however, we are glad to know, is likely to be of only a transient order. Principal Campbell possesses qualities of heart, mind and character that eminently fit him for his responsible post. His kindliness, his broad humanitarian outlook, his powers of reasoned, level judgment are well known to his close associates, while, if I might venture to touch upon his character, I would say that he is a man, steel true and blade straight. Withal, he possesses a fine and a gracious dignity. My sense of honour has its source in the fact that, as representing a great National Veterinary Institute, I can to-day also represent the veterinary profession in Scotland; but my sense of privilege is a very special thing. For over a quarter of a century I have been a member of the Professoriate of the Royal (Dick) Veterinary College and I am deeply imbued with the history and traditions of that great School. This, therefore, is an epoch-making ceremony in that, so far as I am aware, it is the first occasion on which one, so closely thirled to the Royal (Dick) College, has taken an active part in the official proceedings of the Glasgow Veterinary College. I regard my presence here, therefore, as symbolic, and I believe that I am a symbol of that good neighbourliness, co-operation and fraternal relationship which should, indeed which must, exist between the two Scottish institutions. If misunderstandings have arisen in the past, they must be forgotten. It is only by the closest and friendliest collaboration that they can most profitably work together for the advancement of veterinary education, and, through that, for the advancement of our great Science."

Amongst those present at the prizegiving were the Lord Provost of Glasgow and Mrs. Welsh (who presented the prizes to the successful students), Sir Patrick Laird, Secretary of the Department of Agriculture for Scotland, Mr. John W. McIntosh, M.R.C.V.S., F.R.S.E., Treasurer of the Royal College of Veterinary Surgeons, and Mr. John Stirton, Secretary of the Highland and Agricultural Society.

Mr. Alexander Murdoch, C.A., Chairman of the Board of Governors, presided.

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Lister Memorial Lecture.—The first Lister Memorial Lecture of the Society of Chemical Industry was delivered on November 9th by Professor Sir Alexander Fleming, F.R.S., at the University of Edinburgh. Sir Alexander Fleming spoke on "Antiseptics," and mentioned that the newest antiseptics had a much greater effect against certain bacteria but were less destructive to leucocytes than the older ones; the anti-bacterial to anti-leucocytic ratio of penicillin was 250,000, of sulphanilamide 1,000, but of carbolic acid only 0·5.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal views of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

Letters to the Editor should reach the Office not later than by the first post on Monday morning for insertion in following Saturday's issue.

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"THE TUBERCULIN TEST" (By Mr. ESMOND BROWN)

Sir,—I have purposely waited receipt of your latest issue in the hope that some younger veterinarian would have portrayed in it something akin to what I've been thinking since I read Mr. Brown's paper, which is so remarkably rich in several respects. In the absence of any such reference I am tempted to make comment, though quite conscious that it is a rash thing to do.

Typical of most of all that Mr. Brown speaks or writes, this paper overflows with goodwill combined with jocose, light-hearted and on occasion daring raillery, despite the note of serious intent that is never absent.

This quality gives lustre and indeed entertainment to your pages and the excellence of his manner in dealing with the scientific aspect of a subject so thorny must appeal to your readers.

One often reads and hears of instances of positive tests being followed by careful *post-mortem* examinations in which negative findings have been certified. This sort of thing makes one wonder how much time and labour a conscientious individual would need to devote to such a job before he should dare to commit himself to the issue of a negative certificate.

I am not aware that anyone has suggested or proved that the lesions of tuberculosis must have reached macroscopic dimensions before they can yield sufficiently the lysins that enable reaction to tuberculin, and if it be that a multitude of microscopic lesions can so operate, a problem embodying tedious investigations looms ahead.

Most men, meanwhile, will agree with Mr. Brown that wisdom requires them to be true disciples of the powers that be whose task it was to adopt and apply decisions based naturally on preconceived ideas that do not seem to be the last word we may hear.

Among the various tuberculins which have been on the market, some have been referred to as of "low potency" and others as of "high potency."

Men who have only used tuberculin and have *no* laboratory experience of its manufacture are apt to wonder what the element is that increases potency if it be something apart from greater concentration. It would also be enlightening to be told at what stage in the ascent towards a higher potency a tuberculin may have been developed too far, making its mere potency turn to sheer impotency through fallacious positive results.

Even if there can be no early advance in exact knowledge the present tribunal of tuberculin testing will accomplish much by carrying on its good work.

Yours faithfully,

Elm Lodge, Bothwell Road, Hamilton, Lanarks. HUGH BEGG, SEN.

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SIX-DAY CHICK DISEASE

Sir,—The paper of Messrs. Temperton and Bythell in your issue of October 28th puts on record the symptoms, lesions and nature of a condition which was prevalent during the last chick breeding season.

The impression is given that the "disease" is essentially one resulting from war-time chick rations. This is probably not the case. A condition having a similar course and appearance was encountered by Mr. C. A. McGaughey (Personal communication) in Lancashire some years before the war. This observer coined the name "Six-day Disease" to indicate the most characteristic feature, namely, the age at which illness became obvious. Mr. W. R. Kerr (Personal communication) also encountered a disease which was apparently identical and which caused serious losses in Northern Ireland.

During the course of routine diagnosis and experimental work at this Laboratory numerous chicks sick and dead from this "disease" have been examined. The symptoms have been similar to those described by Temperton and Bythell; several additional notable observations, however, have been made.

Newly hatched chicks were strong and vigorous and thrived well until five days old. Then quite suddenly several showed symptoms. They lost weight rapidly and stood about with their legs straddled and neck retracted, having a hunched-up appearance. They became exceedingly weak and would sit with their hocks flat on the ground. If knocked over they were unable to regain their feet. There were no symptoms of nervous disorder. Sick chicks would continue to pick feebly at food until shortly before death. When handled it was noted that they were surprisingly light and the keel bone was very prominent. The droppings from some infected chicks were as large as those of chicks several weeks of age. It was sometimes observed that chicks cried out as if in pain when passing droppings. Some chicks died suddenly and quickly, others which appeared to be dead emitted a feeble gasp when handled.

On *post-mortem* examination no diagnostic lesions have been observed. Some findings of a non-specific nature have been seen so frequently that they appear to be of value in arriving at a diagnosis. Dead chicks were invariably undersized and poorly nourished. The muscles of the breast and legs were small and sometimes oedematous. The gall bladder in the great majority of cases was grossly distended with a dark green coloured bile. This was the most constant finding. Perhaps of greater diagnostic value was the condition of the intestine. In the majority of chicks examined the gizzard contents were of a coarse husky and fibrous nature. The duodenum contained fluid which varied from a watery to a pea soup consistency and was sometimes interspersed with bubbles of gas. Undigested food was usually present. The lower part of the intestine was frequently distended with a firm, rather dry mass of coarse undigested food particles which formed a cast of up to several inches in length. This cast was sometimes coated with mucus. Enteritis of moderate severity was noted in some specimens. Chicks dying in the early stages of the disease usually had incompletely absorbed yolk sacs containing decomposing yolk material.

Congestion of the lungs and kidneys was not a conspicuous feature. We did not observe abnormal softness of the leg bones.

Results of experiments carried out here were in general agreement with those of Temperton and Bythell. No evidence of infection was obtained. Addition of meat and starch to a national chick mash which had failed to support previous hatches improved the rearing results; whilst addition of ground straw and charcoal increased mortality. A general recommendation to supplement national chick mash with grain was made to chick breeders who had experienced losses. Good results were reported.

The effect of brooding temperature in six-day disease may be of importance. An outbreak which we believe to be this condition commenced quite suddenly at the end of October, 1943. There had been no change in diet between the affected hatch and previous hatches which had reared normally. Chicks hatched October 8th, October 15th and October 29th, 1944, brooded in the same brooders (an outdoor type) and fed on a ration which had proved satisfactory throughout the summer suffered a mortality of 17·5 per cent., 20 per cent. and 45 per cent. between sixth and tenth day.

It seems likely that the fall in temperature which occurs during the autumn night in this type of brooder is sufficient to reduce the vitality of the chicks and to stimulate the onset of losses which would not otherwise have occurred.

Yours faithfully,

F. D. ASPLIN.
N. DOBSON.
R. F. GORDON.
J. D. BLAXLAND.

Veterinary Laboratory,
New Haw, Weybridge, Surrey.

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"SOME CLINICAL DIAGNOSTIC METHODS OF USE IN CONDITIONS ASSOCIATED WITH ANIMAL PARASITES"

Sir,—With reference to Dr. Sheather's letter published in *The Veterinary Record* of November 4th, there is only one remark to which I should like to reply. On the subject of periodicity of oöcyst discharge, Dr. Sheather may be interested to refer to the following papers:—

1. BOUGHTON, D. C. (1933.) Diurnal Gametic Periodicity in Avian Isospora. *Amer. J. Hyg.* **18**. 161-184.
2. ———. (1933.) Diurnal Periodicity in the Oöcyst Production of the Sparrow Isospora. *J. Parasit.* **19**. 177.
3. ———. (1934.) Periodicity in the Oöcyst Production of the Pigeon Eimeria. *J. Parasit.* **20**. 329.
4. ———. (1937.) Studies on Oöcyst Production in Avian Coccidiosis. I. Dilution Count Technique. II. Chronic Isosporan Infections in the Sparrow. *Amer. J. Hyg.* **25**. 187-211.
5. ———. (1937.) Studies on Oöcyst Production in Avian Coccidiosis. III. Periodicity in the Oöcyst Production of Eimerian Infections in the Pigeon. *J. Parasit.* **23**. 291-293.
6. ———, ATCHLEY, F. O., and ESKRIDGE, L. C. (1935.) Experimental Modification of the Diurnal Oöcyst Production of the Sparrow Coccidium. *J. exp. Zool.* **70** (1). 55-74.
7. LEVINE, P. P. (1942.) The Periodicity of Oöcyst Discharge in Coccidial Infection of Chickens. *J. Parasit.* **28**. 346-348.
8. ———. (1942.) A new Coccidium Pathogenic for Chickens, *Eimeria brunetti* n. sp. (Protozoa: Eimeriidae). *Cornell Vet.* **32**. 430-439.

These were not mentioned in my paper because no specific reference was made to that aspect of Coccidiosis.

Yours faithfully,

The Beeches, Streatley, Berkshire. M. L. BINGHAM.
November 11th, 1944.

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THAT ABBREVIATION "VET."

Sir,—The amusing and interesting letter of Mr. N. F. Pollock recalls a "striking substitute" coined some 50 years ago by a country client of mine. Then a young practitioner of 26, I received a letter addressed "The Veteran," Mold, which was diagnosed by a psychic postmaster as intended for me, and the piquant savour of the compliment still lingers. To-day what does seem to me to be important is to see to it that "Vet." shall only mean a full graduate of the R.C.V.S., and that no back doors shall be opened to admit "near misses" whom the busy public may mistake for the genuine article, as seems to be a present tendency.

Yours faithfully,

Sandy Lane, Prestatyn. E. P. EDWARDS.
November 12th, 1944.

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Sir,—One may be forgiven the belief that whoever started the correspondence had met with one of the gentry who, in days gone by, used the abbreviation in a way that indicated a "person" of the menial order, and was expected to use the "Tradesmen's Entrance." Happily the "race" is almost extinct, although I met with one a few weeks ago. 'Ere I left the house they held a more enlightened knowledge of the profession and its status.

It is our duty to correct the misuse of "Vet." because it is seldom used offensively, except in ignorance. We are entirely responsible for the lack of knowledge the general public has, and have had, of us owing to our pathetic efforts at publicity and propaganda.

To-day there is a certain amount of distinction in the title which will increase to the envy of the other professions.

Yours faithfully,

The Willows Bungalow, Maidenhead Road, Windsor. R. F. WALL.
November 17th, 1944.

[*This correspondence is now closed.*—EDITOR.]